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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

BRIAN C. STEED  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

August 2, 2019

Kirt Tatton, General Manager  
Canyon Fuel Company, LLC  
P.O. Box 1029  
Wellington, Utah 84542

Subject: Completion of Midterm Review, Task #5965, Canyon Fuel Company, LLC, Soldier Canyon Mine, C/007/0018

Dear Mr. Tatton:

On June 28, 2019, Canyon Fuel Company, LLC was informed that the Division of Oil, Gas and Mining (the Division) had commenced a midterm permit review for the Soldier Canyon Mine.

The midterm review has now been completed and will now be closed; however, the Division has identified deficiencies that must be addressed. The deficiencies have been included with this letter (See Attached). The name of the author for each of the respective deficiencies has been provided.

Your response to these deficiencies will need to be submitted as an amendment to your MRP and will be processed as a separate task. Please submit the required amendment with the accompanying C1 and C2 forms by no later than September 13, 2019.

If you have any questions regarding these requirements or the Midterm Review process, please don't hesitate to call me at 801-538-5350.

Sincerely,

Steve Christensen  
Coal Program Manager

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## Technical Analysis and Findings

### Utah Coal Regulatory Program

**PID:** C0070018  
**TaskID:** 5965  
**Mine Name:** SOLDIER CANYON MINE  
**Title:** MIDTERM PERMIT REVIEW

#### Operation Plan

##### Topsoil and Subsoil

###### Analysis:

The application meets the State of Utah R645 requirements for soils operation plan. There is 310 CY of substitute topsoil stored at the sediment pond.

The topsoil and subsoil and boulder stockpiles at the topsoil canyon stockpile site were created during the surface facilities expansion, in 1992. Soldier Canyon Mine topsoil/subsoil/boulder storage is 2.3 acres. There are 4,414 cu yds of subsoil and 3,560 cu yds of topsoil stored at the storage site of which 590 CY will remain at the topsoil storage site for reclamation of that site.

The total mine site disturbed area is 14.6 acres, of which 10.3 acres are pre-SMCRA and 4.3 acres are post-SMCRA (page 5-67 Chap 5). The topsoil and substitute topsoil available for reclamation is 16,704 CY, of which 5,090 CY are designated for the reclamation of the topsoil storage area and the sediment pond (Chapter 2, page 2-29).

There will be 25,643 CY of excess fill and topsoil redistributed over the 14.6 acre mine site (less the 1.1 acre sediment pond and less the 0.73 acre stream channel and less the 0.74 acre county road equates to 12.03 acres). Thus the Division calculates that the final reclamation contours will be sixteen inches above those shown on Map 5.42a. (Map 5.42a has two foot contours.)

pburton

##### Spoil Waste Coal Mine Waste

###### Analysis:

The application meets the State of Utah R645 requirements for disposal of coal mine waste.

A maximum of 1,000 CY of underground development waste may be temporarily stockpiled in the location shown on Exhibit 5.21-1a found in MRP Volume 6 (p 5-42, Section 5.28). Waste stockpiled for longer than three months will be composite sampled (MRP page 5-46). Samples will be analyzed according to Table 6 of the Division's 1988 Guidelines for Topsoil and Overburden. Table 6 includes the analysis of pH, EC, SAR, Se, B, and ABP, among other parameters.

Underground development waste was utilized for the development of pads, roads, and culvert backfill at the site (p5-42, Section 5.28). The material used in construction was analyzed prior to use (Illustration 10.2.6-1 and 10.2.6-2, Appendix 10, Volume 5 of the MRP). Section 5.28 indicates that all underground development waste used in the construction of

the culvert/pad extension will be used to backfill the highwalls and covered with four feet of material (page 5-42, Section 5.28). These statements were made in the MRP because of the chemical characteristics of the waste (the SAR value of 24.5 units and EC of 20.4 mmhos/cm, see Illustrations 10.2.6-1 Appendix 10, Volume 5 of the MRP).

The cut and fill balance for Pre-SMCRA areas is given in Table 5.42-1. According to this table, there is approximately 506,139 cu ft (CF) or 18,745 cubic yards (CY) of excess cut within the operations area. Soils within the top eighteen inches of the regraded site will be analyzed for topsoil suitability criteria (Section 2.43, Chapter 2).

In addition, the post-SMCRA areas will receive an additional twelve inches of topsoil and the pre-SMCRA areas will receive approximately 5 inches of topsoil (page 5-58, Section 5.28).

pburton

## Hydrologic General

### Analysis:

The MRP meets the State of Utah R645 requirements for Hydrology.

The Soldier Canyon mine is in temporary cessation. The MRP requires the permittee to sample to surface water monitoring points along Soldier Creek. These points have been monitored consistently as required.

The sediment control pond has not discharged historically and was dry at the time of the midterm inspection. Diversions, as seen on Plate 7.32-1, were clear and operating effectively during the time of the midterm inspection. The 9 approved ASCAs at the site (see section 7.42.2.1 of the MRP) were working effectively to prevent additional suspended solids from leaving the sites.

adaniels

## Reclamation Plan

### Backfill and Grading General

### Analysis:

The mining and reclamation plan meets the State of Utah R645 requirements for backfilling and grading.

The cut and fill balance for pre-SMCRA areas is given in Table 5.42-1. According to this table, there is approximately 506,139 CF or 18,745 CY of excess cut within the operations area. Backfilling the portals and shafts further the volume of excess fill by 67,305 CF or 2,493 CY (Table 5.42-2). The excess fill will also be used to fill the volume currently occupied by the Soldier Creek culvert (213,427 CF or 7,904 CY, page 5-50). The volume of excess fill is thus reduced to 8,349 CY (page 5-56).

The volume of fill available increases to a total of 18,259 CY, when the fill is displaced by 9,910 CY of filter gravel and riprap during construction of the stream channel (p 5-56). In addition to this fill, there is 7,974 CY of stored topsoil and subsoil, but 590 CY will remain to reclaim the stockpile site, leaving 7,384 CY. Thus the fill and topsoil amounts to 25,643 CY (p 5-56).

There will be 25,643 CY of excess fill and topsoil redistributed over the 14.6 acre mine site (less the 1.1 acre sediment pond and less the 0.73 acre stream channel and less the 0.74 acre county road). Thus the Division calculates that the final reclamation contours will be sixteen inches above those shown on Map 5.42a. (Map 5.42a has two foot contours.)

The locations of cut/fill are shown on Map 5.42a. Post-mining contours are shown on Map 760a.

pburton

## Topsoil and Subsoil

### Analysis:

The mining and reclamation plan meets the State of Utah R645 requirements for soil redistribution.

The total disturbed area is 14.6 acres, of which 10.3 acres are pre-SMCRA and 4.3 acres are post-SMCRA (page 5-67 Chap 5). The volume of topsoil and substitute topsoil material available for reclamation is as follows:

- 310 CY of substitute topsoil at the sediment pond
- 3,920 CY of substitute topsoil under the parking asphalt
- 4,500 CY of substitute topsoil in the sediment pond embankment
- 7,974 CY of topsoil and substitute topsoil at the storage site (includes 590 CY that will remain to reclaim the storage site.)

Total = 16,704 CY of topsoil and substitute topsoil available to reclaim the mine site.

This would provide ten inches of topsoil over the entire site. However, the 590 CY of topsoil is dedicated for reclamation of the topsoil storage site. And 4,500 cu yds of sediment pond embankment soils will be used only to cover the 1.1 acre sediment pond (for a final topsoil depth in the sediment pond location of 2.5 ft). Thus the topsoil available to reclaim the central facilities area is 11,614 CY.

The 7,384 cubic yards stored at the topsoil storage site along with the 3,920 CY in the parking pad and the 310 CY at the sediment pond (a total of 11,614 CY) are dedicated for the 4.3 acres of post-SMCRA disturbance less the 1.25 acres of stream channel and county road. The stored topsoil would cover the 3.05 acres to a depth of twenty seven inches. However, the plan calls for one foot of topsoil (page 5-58) over the post-SMCRA area, requiring only 4,921 CY. The remaining topsoil (6,693 CY) will be applied to the pre-SMCRA disturbed area (10.3 acres less the 1.1 ac sediment pond and 0.24 acres of stream channel which equates to 8.96 acres (p 5-58). The pre-SMCRA areas will receive approximately 5-6 inches of topsoil over the 2.5 ft of graded fill (see Reclamation Plan/Backfilling and Grading above).

pburton

## Revegetation General Requirements

### Analysis:

The MRP meets the State of Utah R645-301-356 requirements for Revegetation General Requirements. There are three identified reference areas for the Soldier Canyon mine: the Deciduous Streambank, Mountain Brush, and Topsoil Storage areas. All three were visited during the midterm inspection and all were observed to be in good shape with no offsite impacts. However, the Division has some recommendations to help improve the efficacy of the reference areas into the future. The Division recommends that GPS coordinate information be added to the MRP for each of the reference sites as well as improved signage on the ground to identify the reference areas in the field. Also, due to the possibility of future offsite impacts from a nearby two-track road, it is recommended that the Topsoil Storage reference area be re-evaluated and possibly moved to a more suitable location. In discussions with the operator, it appears that the Topsoil Storage reference area may not even be needed because its purpose likely was to represent a previously-proposed disturbance for a waste rock site that was never constructed. Whether the other two reference areas would be adequate for reclamation of the topsoil pile and sewage lagoon areas is something that could be considered via a formal assessment.

tmiller

## Bonding and Insurance General

### Analysis:

The current MRP meets the requirements for General Bonding and Insurance.

A reclamation bond has been secured with Ironshore Indemnity Inc., an A rated insurance company. The current bond liability is \$1,593,000 but that will increase as a result of midterm escalation. Liability insurance is provided through Great Midwest Insurance Co. and will expire on February 1, 2020.

jeatchel

## Bonding Determination of Amount

### *Analysis:*

The midterm permit review has found a deficiency in the determination of bonding amount. The current reclamation bond posted with the Division amounts to \$1,593,000, and will require the application of a 5-year escalation factor of 2.32% to maintain the bond current until 2024, the date of the next midterm permit review. A preliminary bond update was recently completed by Vicky Miller in an attempt to update the bonding costs associated with reclamation. The calculations that Vicky submitted were derived from the 2019 R.S. Means manual, and overhead & profit costs have been applied. A basic rundown of the updated bare costs are as follows:

Demolition: \$1,077,975

Backfilling and Grading: \$621,366

Revegetation: \$276,224

Total reclamation liability: \$1,975,565

The new liability is only a subtotal of bare costs since no indirect costs have been applied nor has it been escalated to 2024. The new reclamation cost liability needs to include indirect costs and be escalated to 2024 dollars.

### *Deficiencies Details:*

The midterm has determined that the current reclamation bond does not meet the State of Utah R645 requirements for Determination of Bonding Amount. The following deficiency must be addressed prior to final approval:

R645-301-830: The calculations for the new reclamation bond must include indirect costs and be escalated by 2.32% to 2024, the date of the next midterm review.

jeatchel